Dear Commissioners:

As an expert in wireless communications, a former member of the FCC Technological Advisory Committee (TAC), a life member of the American Radio Relay League (ARRL), and a licensed amateur radio operator (N9NB) for nearly 40 years, I am pleased to offer these ex-parte comments and urge the Commission's consideration of this ex-parte filing for RM-11708.

RM 11708 introduces a new problem (legitimization of wider band digital amateur radio modes and promotion of their interests through rule changes that undo standard spectrum practice) while ignoring the needs of the incumbent users (narrowband modes such as CW, RTTY and PSK31) of the exact same frequencies.

If spectrum policy worked the way as proposed in RM 11-708, the attitude would be: "change spectrum rules to advance the goals of only one class of co-channel users, while claiming there is no harm to incumbents and neglecting the true needs and interests of the other incumbent co-users of the same spectrum." Nothing would work in the real world with this attitude, yet this is admittedly the approach taken in 11-708, as seen on the ARRL FAQ website for this RM, and as vocalized by many proponents of this RM.

All other radio services under the auspices of the FCC would not tolerate proposal RM11708, as it deals with the goals and interests of one co-channel user group (wideband digital data users up to 2.8 kHz bandwidth) without dealing with the needs and protection requirements of another group of co-channel users (incumbent CW/RTTY/PSK31 users in the CW sub bands). Thus, sadly, the view taken by the ARRL in this proposed ruling is that this RM should be passed, and that at some time in the future, the incumbent narrowband CW users should, on their own, file their own proposed ruling, and fight for their own protection after this current RM is passed and further interference ensues. This approach flies in the face of the spirit and function of the amateur radio service and spectrum management, and is terribly irresponsible of the ARRL and other proponents of this RM.

The problem that the ARRL has created in this RM stems from the fact that one user of the spectrum (the proponents of RM11708, who are wideband digital data users with 2.8 kHz bandwidth) are suggesting a new rulemaking that has the ability to legitimize a digital mode that will coexist and interfere with 8 or 14 simultaneous incumbent users of the same spectrum (e.g. 8 CW users in adjacent 350 Hz bands, or 14 PSK31 users in adjacent 200 Hz bands), while offering no acknowledgement or needs to protect the narrowband incumbents, whatsoever.

If wideband digital users and narrowband CW users operated in different spectrum bands, or if they operated in different sub bands in the amateur radio service, such as if the wideband digital data transmissions were allowed to coexist in the SSB/Phone spectrum sub band, this RM would be a non-issue for narrowband (CW/RTTY/PSK31) users, since both voice (SSB and image signals) and wideband data signals (the subject of this proposed RM) share the same channel bandwidths (about 2.8 kHz bandwidth), and interference would occur on a 1 to 1 basis per user (e.g. each amateur radio service user would have the identical bandwidth, certainly much wider than today's narrowband CW, RTTY, and PSK31 users). If the new wideband digital modes were regulated to coexist in the SSB/Phone bands, voluntary spectrum band planning could be done, where the wideband digital signals would coexist with the wideband phone signals, both having about 2.8 kHz bandwidth.

However, such voluntary band planning is impossible with the current RM, since the wideband digital data signal interferes with up to 14 incumbent users at one time. This has so much impact in interference, that voluntary regulation cannot work in the very limited spectrum bands of the amateur radio service. As a simple analogy, voluntary band planning between wideband digital users and narrowband CW users would be like suggesting jumbo jet airplanes voluntarily share the highway with compact cars. If voluntary band planning could work between wideband digital data signals and incumbent CW/RTTY/PSK31 signals, then the FCC would have allowed SSB and other image signals to operate in the protected CW-only bands years ago. Fortunately, the FCC has had the wisdom to never allow this, as they properly recognize the importance of protecting narrowband users, and only allowing other co-channel users to have similar narrowband bandwidths.

Interference needs to be on a par, in terms of bandwidth, between the different users of a sub band. The FCC has acknowledged this, time and again, in rulings throughout the entire electromagnetic spectrum, in all types of wireless services and spectrum bands. This, in fact, is why the FCC has historically protected all CW/digital signals (narrowband in nature) in the lower portion of the HF bands, where wider band Phone signals are prohibited from operation. Now, those narrowband incumbents need protection from wider band digital signals, as well.

Given the fact that wideband digital data signals operate in the same exact spectrum sub band as much narrower CW users, and given the fact that these wideband digital users have between 8 and 14 times the bandwidth of the incumbent CW and PSK31 users, it becomes clear that this RM is irresponsibly one sided. A proper RM must simultaneous address all constituencies/users of the spectrum. The bandwidths between wideband digital signals and incumbent CW/RTTY/PSK31 operators are so different in this case, that the rule changes being proposed only advance the wideband constituents of the CW sub bands through a removal of the fundamental symbol rate definition, while failing to protect (and thus eventually killing off through increased interference) the narrowband constituents. The proposed rule changes attempt to remove the use of the standard communications term "symbol rate", which is fundamental, since the definition of symbol rate is integral to spectral efficiency and bandwidth. This RM only perpetuates the interests of wideband digital users who share the same spectrum with much narrowband CW/RTTY users who have, historically, always been protected in the FCC Rules (e.g., the lower end of the amateur bands have always been reservered for narrowband CW/RTTY users who provide vital emergency preparedness and low power capabilities with the very narrowband channel bandwidths, while providing a low cost communications mode that allows economically disadvantaged persons to participate in the amateur radio hobby).

This RM only legitimizes and perpetuates the interests and desires of wideband digital users in a sub band of the amateur radio service that has always ensured the protection of narrowband signals from wider band signals such as SSB or AM).

Given the enormous bandwidth difference between these new modern wideband digital modes, and the enormous interference a single wideband digital transmission can cause to so many incumbent users, one questions why the ARRL is advocating these wideband signals to encroach on the narrowband, fragile incumbents in the first place.

The ARRL and FCC should immediately revoke RM 11708, as it fails to consider all users of the same spectrum, and fails to protect the narrowband CW/RTTY/PSK31 users who have a very large incumbent base of users, and who require immediate protection from interference from wider band co-channel users. Indeed, narrowband CW, RTTY, and PSK31 enthusiasts make up a great deal of the 750,000 licensed ham operators in the US. The ARRL must "go back to the drawing board" and practice standard spectrum policy, which is to work out a solution that offers all of the stakeholders of the same spectrum an opportunity to ensure a unified approach to minimize interference and to allow an efficient use of shared spectrum.

One way to improve RM11708 is to alter the amateur radio service rules such that wider bandwidth digital modes, with bandwidths greater than 500 Hz, would coexist in the SSB/Phone bands (similar to slow scan and ATV image signaling of today), and to regulate all digital modes with bandwidths less than 500 Hz to exist in the CW sub bands. This would ensure bandwidth parity in all sub bands of the amateur radio service, with the interference caused by any future narrowband digital users and all incumbent CW/RTTY/PSK31 users in the CW sub band to be on a 1:1 bandwidth basis. This approach would protect incumbent narrowband users, and would preserve the historic protections of narrowband CW users that has existed in the amateur radio service for many decades. This approach would also allow digital wideband modes to work in the SSB sub bands, where there is more spectrum allocated to users as compared to CW users (for example, a survey of all amateur bands shows that there is more Phone band spectrum than CW band spectrum in each of the amateur radio bands).

Another way to improve RM 11708 would be to carve out separate sub bands. The time may be ripe for this with the advent of new wider bandwidth digital modes. The ARRL and FCC could work together with the amateur service constituencies to evolve from the historic "CW" and "Phone" sub bands, and could work to create three new bands: CW, Wideband Data, and Phone bands, each sharing a portion of the allocated amateur radio service. There are sure to be other creative ways that the ARRL could pursue a modified RM, but it should do so in cooperation with its membership before it suggests future rulemakings on this topic.

The current RM 11708 fails to address the critical issues of protecting incumbent users who co-exist in the sub band of interest, while suggesting rule changes that legitimize the continued growth and use of wide band digital modes that currently are allowed to swamp out narrowband modes in the CW sub bands.

The current RM has complete disregard for needed protection of vulnerable narrow band users who coexist in the same spectrum of its proponents.

The ARRL, as the chief lobbying organization of the amateur radio service in the USA, has sadly abandoned the most vulnerable, yet one of the largest and most important, constituencies of the amateur radio community through this RM, and must retool this RM to consider and address the needs of incumbent narrow band users. As written, this RM threatens to further legitimize wideband digital modes that cause interference to narrowband users, and thus hampers the ability of narrowband users to serve the public in emergencies as well as providing a way to allow low cost equipment and low cost antennas to provide communications. Without proper protections, the vital mode of CW, and other narrowband modulations such as RTTY and PSK31 , would suffer rapid extinction through interference.

The FCC must correct the flawed RM proffered by the ARRL, and the ARRL must involve all constituents of the CW sub bands in any further rulemakings of this nature, while ensuring protections for the CW/RTTY/PSK31 modes that are such an important part of the amateur radio service.

The current situation of having wideband digital modes interfere with incumbent narrowband CW/RTTY/PSK31 signals is only exacerbated further with the proposed rule change, and further legitimizes the current problem that will only worsen as narrowband users are not given protection.

I am sure that the ARRL and the FCC would find that most narrowband amateur users are very supportive of new digital modes and advancement of the hobby, and there is surely great support to have new wideband digital modes to have a home, but the CW/Narrowband modes, so vital for low power emergency communication and for long distance/DX with the use of very modest antennas, must have protection. The problem with RM 11708 in its present form is that it ignores the protections needed for incumbent narrowband users while advancing the goals and the changing of fundamental rules that legitimize and promote only one particular group of users of the shared spectrum.

The incumbents are always considered in FCC/spectrum rulings. Why the ARRL and wideband digital aficionados have not involved the narrowband users, and why they have not worked to protect them, is hard to fathom and is a major flaw that needs to be rectified, as all users of a spectrum should be consulted and involved in rulemaking. Furthermore, why the ARRL has not considered a proposal to move wideband digital data signals into the SSB sub bands, where existing image and SSB signals of comparable 2.8 kHz bandwidth already exist, is something that is quite hard to understand, as well. The ARRL RM attempts to legitimize wideband digital interference, by a bandwidth factor of up to 14 to 1, in the CW sub band where the most fragile users currently operate.

The raw technical facts are that the ARRL and FCC will have to address this emergence of wideband digital data head on and with consideration for all users of the spectrum, as CW/Narrowband signals must be protected.

It is important to note that the proliferation of wideband digital signals in the CW only sub bands is akin to allowing SSB/Phone signals in the historically protected CW bands (something the FCC has NEVER allowed for over 50 years). In its current form, RM 11708 has the comparable legal impact of opening the door and legitimizing rule changes that create new problems for the incumbent users without protecting them.

In closing, it should be noted that the ARRL, in proposing RM11708, claims that the narrowband users are not affected, and are in fact saved from the potential of wider band users through its proposed abandonment of the term "symbol rate" in the FCC rules, but this is simply not true. The technical inaccuracy stems from the fact that symbol rate is a proper term to keep in spectrum regulations, as wideband signals with poor data rate will, by definition, be less spectrally efficient and less able to propagate with sufficient Signal to Noise Ratio to be useable. In other words, the ARRL FAQ on this rule making inaccurately claims to "save" narrowband users from a potentially super wideband digital user, but the facts are that such wideband signals would not be adopted because they fail to work well when compared to more efficient modulations. Thus, the RM offers a fabricated red herring solution to be "solved" through its flawed proposal, and instead it is really just an attempt to legitimize the proliferation of wider band digital signals that will, by one single user, interfere with between 8 to 14 incumbent users in the historic CW only sub bands that have been protected from phone signals that have the very same bandwidth.

Sincerely,

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N9NB